Claims

1. A method in a data communication system wherein data is transmitted by use of at least two protocols that are capable of re-transmission of data, each of said protocols being implemented in at least two nodes of said data communication system, the implementation of a protocol implemented in a transmitting node being a transmitting protocol entity and the implementation of a protocol in a receiving protocol being a receiving protocol entity, one of said at least two protocols capable of re-transmission of data being a higher layer protocol than another of said at least two protocols, said another protocol therefore being a lower layer protocol, the higher layer transmitting protocol entity providing the lower layer transmitting protocol entity with a protocol data unit to be transmitted, said method being **characterised** by the following steps:

awaiting, in the higher layer transmitting protocol entity, a transmission result from said lower layer transmitting protocol entity, said transmission result reporting the result of the transmission of said protocol data unit by said lower layer transmitting protocol entity;

receiving, in said higher layer transmitting protocol entity, said transmission result;

deciding, responsive to said transmission result, whether the higher layer transmission protocol entity should re-provide said lower layer transmitting protocol entity with said protocol data unit; and

identifying, by the higher layer transmitting protocol entity in communication with the lower layer transmitting protocol entity, said protocol data unit by use of an identifier.

2. The method of claim 1, wherein

encapsulation of data is carried out by means of protocols located in different nodes.

3. The method of claim 1, wherein

said identifier is an identifier local to the communication between the higher layer transmitting protocol entity and the lower layer transmitting protocol entity.

4. The method of claim 3, wherein

said identifier is assigned to said protocol data unit by said higher transmitting protocol entity.

5. The method of any of claims 1-4, wherein

said higher layer transmitting protocol entity receives an acknowledgement of reception of said protocol data unit from said lower layer transmitting protocol entity after having provided said lower layer transmitting protocol entity by said protocol data unit, said protocol data unit being identified by said identifier in said acknowledgement of reception.

6. A method according to claim 1, modified in that said steps of awaiting, receiving and deciding are replaced by the following step:

sending, from the lower layer transmitting protocol entity, a transmission result to the higher layer transmitting protocol entity, said transmission result reporting the result of transmission of said protocol data unit by said lower layer transmitting protocol entity.

7. The method of claim 6, wherein

said transmission result is transmitted to said higher layer transmitting protocol entity in a message which is transparently relayed by some or all of any intermediate protocol entities.

8. The method of claim 6 or 7, wherein

said protocol data unit is identified, by the lower transmitting protocol entity in communication with the higher layer transmitting protocol entity, by use of an identifier.

9. The method of claim 8, wherein

said identifier is assigned to the protocol data unit by said lower layer transmitting protocol entity.

10. The method of any of claims 1-9, wherein

said higher layer transmitting protocol entity and said lower layer transmitting protocol entities are located within different nodes.

11. The method of any of claims 1-10, wherein

said data communication system comprises a radio interface.

12. The method of claim 11, wherein

said radio interface is a radio interface in a mobile radio communication system.

13. The method of claim 12, wherein

said mobile radio communication system is a mobile radio communication system operating according to the General Packet Radio System standard; and

the higher layer transmitting protocol entity is a Logical Link Control protocol and the lower layer transmitting protocol entity is a Radio Link Control/Media Access Control protocol.

14. A computer program comprising software code portions for, when said software code portion is run on a computer serving as a transmitting node in a data communications system, providing another computer program with a protocol data unit to be transmitted within said data communication system, said computer program further comprising software code portions for re-providing said another computer program with said protocol data unit, said computer program being **characterised** by

computer code portions for awaiting, from said another computer program, a transmission result reporting the transmission of said protocol data unit; and

computer program portions for receiving said transmission result from said another computer program.

15. The computer program of claim 14, further comprising

computer code portions for deciding whether or not to re-provide said protocol data unit to said another computer program, said computer code portions for deciding being adapted to use said transmission result in deciding whether or not to re-provide said protocol data unit.

16. The computer program of claim 14 or 15, further comprising

computer code portions for allocating an identifier to each protocol data unit, and

computer code portions for informing said another computer program about said identifier.

17. The computer program of any of claims 14-16, said computer code portions for providing and re-providing being adapted to provide and re-provide according to the Logical Link Control protocol.

18. A computer program comprising software code portions for, when said software code portion is run on a computer serving as a transmitting node in a data communications system, receiving from another computer program a protocol data unit to be transmitted within said data communication system and computer code portions for transmitting said protocol data unit, said computer program further comprising software code portions for re-transmitting said protocol data unit, said computer program being **characterised** by

software code portions for sending a message including the result of the transmission or re-transmission of said protocol data unit to said another computer program.

19. The computer program of claim 18, further comprising

software code portions for allocating an identifier to said protocol data unit, and

software code portions for informing said another computer program about said identifier.

20. The computer program of claim 18 or 19, said computer code portions for receiving, transmitting and re-transmitting being adapted to receive, transmit and re-transmit according to the Radio Link Control/Media Access Control protocol.

21. A computer program product comprising a computer readable medium, having stored thereon a computer program according to any of claims 14-20.

22. A node in a data communication system wherein data is communicated, said node being characterised by

a computer program product according to claim 21.

23. A data communication system wherein data is communicated being **characterised** by

a node according to claim 22.